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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,938	02/27/2004	George Rauscher	21140.001	9207

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EXAMINER

SUHOL, DMITRY

ART UNIT PAPER NUMBER

3725

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,938

Applicant(s)

RAUSCHER ET AL.

Examiner

Dmitry Suhol

Art Unit

3725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-8 and 10-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-8 and 10-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allyne '476 in view of Panyard et al ' 230 and Squires '053 or Lynall '270. Allyne teaches that it is known to construct a cylinder liner (5) having a flange portion (5a) from a variety of metals through any known techniques (page 4, col. 1, lines 38-56). The limitations of claim 2 are shown in figures 1 and 4.

Panyard is relied upon to teach that it is known to construct a cylinder liner from a carbon alloy steel (col. 3, lines 18-20) since a steel liner has a marked increase in stiffness over a conventional iron liner resulting in improved performance characteristics (col. 4, lines 28-30).

Squires and Lynall both teach that it is known to construct a metallic cylindrical member having flanges through the step of cold forging in a press (see figures 1-2 of Lynall and figures 1-6 of Squires).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the claimed invention to have manufactured the cylinder liner of Allyne from a carbon alloy steel material for the purpose of improved performance characteristics. It

would have been further obvious to manufacture the flange portion of Allyne through cold forging steps in a hydraulic press for the purpose of quick and cost effective manufacture, especially since Allyne clearly states that his cylinder liner may be manufactured by any known methods.

Regarding claims 1-6 and the carbon content of the steel and the internal diameter of the cylinder liner, it would have been obvious to utilize carbon steel with carbon amount in the claimed ranges and to manufacture the cylinder liner with the claimed inner diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Furthermore, the cylinder diameter would only depend on dimensions of the cylinder block which is to receive it.

Claims 7-8, 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allyne '476, Panyard et al ' 230 and Squires '053 or Lynall '270, as stated above, and further in view of Usui '621. Allyne, as modified by Panyard and Squires '053 or Lynall, discloses most of the claimed elements but for closely fitting a forming mandrel within the internal diameter as required by claim 7 and finish machining the forged cylinder liner blank to form a cylinder liner as required by claims 7 and 14. However, the use of a mandrel during the formation of the flange portion is taught by Squires (elements 6, 15 and 24) while the step of finish machining the liner blank to form a cylinder liner is taught by Usui (col. 2, lines 42-47). Therefore it would have been

obvious to include the use of a forming mandrel in the manufacture of the cylinder liner of Allyne for the purpose of ensuring that the sidewall portions of the cylinder are not deformed in an unwanted manner. It would have been further obvious to include a finish machining step in the production of the cylinder liner of Allyne for the purpose of providing a finished cylinder liner with superior qualities.

Regarding claims 7-11 and 15-17 and the carbon content of the steel (steel type) and the internal diameter of the cylinder liner, it would have been obvious to utilize carbon steel with carbon amount in the claimed ranges and to manufacture the cylinder liner with the claimed inner diameter, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Additionally, the material used is considered a design choice in that applicants clearly state that a variety of starting materials could be used in the manufacture of the cylinder liner (applicants specification page 10, line 25). Furthermore, the cylinder diameter would only depend on dimensions of the cylinder block which is to receive it.

Regarding claim 12, applying 500 to 1000 tons of force to the press dies to form the flange portion would have been obvious since it would only depend on the materials used and final dimensions of the desired product and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding claim 13, Squires teaches that the application of heat to the end portion of a metal tube member to forge flange ends is known (page 1, lines 6-11) while

the specific step of induction heating and temperature of about 1200 degrees F would have been obvious since the examiner that official notice that such steps are well known in the metal working arts and the temperature would only depend on the desired workability of the metal work piece during deformation. Furthermore, such a step is considered a design choice in that applicants state that the process does not require the heating step as claimed (applicants specification page 11, lines 5-6).

Response to Arguments

Applicant's arguments filed 6/26/2006 have been fully considered but they are not persuasive. Applicants argue that the specific carbon content of the alloy steel utilized to manufacture the cylinder is not taught in the prior art and that Panyard prefers to use a "low carbon" steel. In response the examiner points out that Panyard clearly states that the steel utilized with his invention may be a high carbon steel (col. 3, lines 18-21) while such high carbon steels which meet all of the required carbon content is well known in the art (i.e. 1055-1095), therefore since Panyard clearly teaches that the material of construction may use a high carbon steel applicants claimed ranges for the steel content are obviated by the prior art.

Applicants further argue that the choice high carbon steel with the specific carbon ranges as claimed is not merely a design choice. In response the examiner points out that applicants clearly states that a variety of materials may be used to manufacture the cylinder (specification page 10, line 25) and although applicant's representative argues for why such materials were chosen by the applicants, such reasoning was not present

in applicants disclosure and since it is clearly stated that a variety of different materials could be used is considered a design choice.

Applicants further argue that Squires and Lynall are non-analogous references since they deal with the manufacture of devices like propeller blades and rivets, respectively. In response, the examiner points out that it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the nexus between the prior art is that both references (Squires and Lynall) deal with a process of flanging tubular members (much like the cylinder of Allyne as shown in figure 2). Squires teaches a cold forging process in as much as applicants invention utilizes heat as required by their claim 17, while the Lynall reference clearly states that any deformable material may be cold forged and obviously a high carbon steel as disclosed by the applicants has properties which allow it to deform during a cold forging process (otherwise applicants process of their invention would not work) and thus the cold forging steps are obviated by the prior art.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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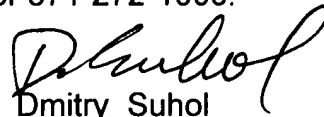
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Suhol whose telephone number is 571-272-4430. The examiner can normally be reached on Mon - Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Dmitry Suhol
Primary Examiner
Art Unit 3725

ds